

## Contents of *Aquaculture*, Volume 140

VOL. 140 NOS. 1-2

15 MARCH 1996

### Introduction

#### Atalone Aquaculture

- A.E. Fleming (Parkville, Vic., Australia) and P.W. Hone (Henley Beach, S.A., Australia) . . . . . 1

### Artificial Diets and Nutrition

#### The development of artificial diets for abalone: A review and future directions

- A.E. Fleming (Parkville, Vic., Australia), R.J. Van Barneveld (Adelaide, SA, Australia) and P.W. Hone (Henley Beach, SA, Australia) . . . . . 5

#### Effect of dietary protein level on growth performance of South African abalone, *Haliotis midae*, fed fishmeal-based semi-purified diets

- P.J. Britz (Grahamstown, South Africa) . . . . . 55

#### The suitability of selected protein sources for inclusion in formulated diets for the South African abalone, *Haliotis midae*

- P.J. Britz (Grahamstown, South Africa) . . . . . 63

#### Comparative growth performance and digestive enzyme activity of juvenile South African abalone, *Haliotis midae*, fed on diatoms and a practical diet

- J. Knauer, P.J. Britz and T. Hecht (Grahamstown, South Africa) . . . . . 75

#### The use of silage made from fish and abalone viscera as an ingredient in abalone feed

- M.T. Viana, L.M. López, Z. García-Esquivel and E. Mendez (Ensenada, BC, México) . . . . . 87

#### Studies on the feeding attractants for fishes and shellfishes. XXVI. Probable feeding attractants in allspice *Pimenta officinalis* for black abalone *Haliotis discus*

- K. Harada, T. Miyasaki (Nagata Hon'machi Shimonoeki, Japan), S. Kawashima and H. Shota (Osaka, Japan) . . . . . 99

#### The composition and amino acid balance of abalone (*Haliotis rubra*) tissue

- R.H. King (Werribee, Vic., Australia), C.J. Rayner, M. Kerr (East Melbourne, Vic., Australia), H.K. Gorfine and P.E. McShane (Queenscliff, Vic., Australia) . . . . . 109

#### Effect of diet on the lipid composition of wild and cultured abalone

- G.A. Dunstan, H.J. Baillie, S.M. Barrett and J.K. Volkman (Hobart, Tasmania, Australia) . . . . . 115

### Postlarval Culture

#### Boundary layers and abalone postlarval culture: Preliminary studies

- R. Searcy-Bernal (Ensenada, BC, México and San Diego, CA, USA) . . . . . 129

### Husbandry

#### Infestation of *Haliotis rufescens* shells by a sabellid polychaete

- F.R. Oakes and R.C. Fields (Cayucos, CA, USA) . . . . . 139

#### The effect of four anaesthetics on *Haliotis midae* and their suitability for application in commercial abalone culture

- H.I. White, T. Hecht and B. Potgieter (Grahamstown, South Africa) . . . . . 145

- Effect of recombinant vertebrate growth hormones on growth of adult abalone, *Haliotis kamtschatkana*  
B.E. Taylor, D.A. Donovan (Vancouver, BC, Canada), E. McLean, E.M. Donaldson (West  
Vancouver, BC, Canada) and T.H. Carefoot (Vancouver, BC, Canada) . . . . . 153

### Tropical Abalone

- A review of the culture of tropical abalone with special reference to Thailand  
P. Jarayabhand and N. Paphavasit (Bangkok, Thailand) . . . . . 159

### System Design

- Growth and survival of the blue abalone *Haliotis fulgens* in barrels at Cedros Island, Baja California,  
with a review of abalone barrel culture  
J.G.G. Aviles (Ensenada, BC, México) and S.A. Shepherd (Henley Beach, SA, Australia) . . . . . 169
- Preliminary studies on increased survival and accelerated growth of overwintering juvenile abalone,  
*Haliotis discus hannai* Ino  
Z.Q. Nie (Fuzhou City, PR China), M.F. Ji and J.P. Yan (Qingdao City, PR China) . . . . . 177

### Marketing

- The abalone market: Opportunities for cultured abalone  
F.R. Oakes and R.D. Ponte (Cayucos, CA, USA) . . . . . 187

## VOL. 140 NO. 3

30 MARCH 1996

### Review

- Application of fluorescence in situ hybridization (FISH) techniques to fish genetics: a re-  
view  
R.B. Phillips and K.M. Reed (Milwaukee, WI, USA) . . . . . 197

### Diseases, Parasites and Predators

- Field trials on the efficacy of the organophosphorus compound azamethiphos for the control of sea lice  
(Copepoda: Caligidae) infestations of farmed Atlantic salmon (*Salmo salar*)  
M. Roth, R.H. Richards (Stirling, UK), D.P. Dobson (Cambridge, UK) and G.H. Rae (Perth, UK) . . . . . 217
- Biofilm formation by *Vibrio harveyi* on surfaces  
I. Karunasagar, S.K. Otta and I. Karunasagar (Mangalore, India) . . . . . 241
- Physiological characterization of *Saprolegnia parasitica* isolates from brown trout  
J. Diéguez-Urbeondo, L. Cerenius and K. Söderhäll (Uppsala, Sweden) . . . . . 247
- The relative susceptibility of fish to infections by *Flexibacter columnaris* and *Flexibacter maritimus*  
M. Soltani, B.L. Munday and C.M. Burke (Launceston, Australia) . . . . . 259

### Physiology and Endocrinology

- Application of controlled-release, GnRHa-delivery systems in commercial production of white bass  $\times$   
striped bass hybrids (sunshine bass), using captive broodstocks  
C.C. Mylonas (Maryland, MD, USA), Y. Magnus (Menashe, Israel), A. Gissis (Hamaapil, Israel),  
Y. Klebanov (Menashe, Israel) and Y. Zohar (Maryland, MD, USA) . . . . . 265
- Aspects of the reproductive biology of the sharpnose seabream *Diplodus puntazzo* (Cetti, 1777). I.  
Gametogenesis and gonadal cycle in captivity during the third year of life  
V. Micale, F. Perdicizzi (Messina, Italy) and G. Basciano (Marsala, Italy) . . . . . 281

## Aquacultural Engineering Society . . . . . 293

## VOL. 140 NO. 4

30 APRIL 1996

### Review

- Fish culture in rainfed rice fields of northeast Thailand  
D.C. Little (Bangkok, Thailand), P. Surintaraseree (Bangkok, Thailand; Quebec, Canada) and N.  
Innes-Taylor (Bangkok, Thailand) . . . . . 295

**Diseases, Parasites and Predators**

- Efficacy of formalin, hydrogen peroxide, and sodium chloride on fungal-infected rainbow trout eggs  
T.M. Schreier, J.J. Rach and G.E. Howe (La Crosse, WI, USA) . . . . . 323

**Genetics and Breeding**

- Genetic and environmental variances of body size and morphological traits in communally reared clonal lines from gynogenetic diploid ayu, *Plecoglossus altivelis*  
N. Taniguchi, M. Yamasaki, M. Takagi (Kochi, Japan) and A. Tsujimura (Wakayama, Japan) . . . . . 333

**Nutrition**

- Comparison of two assay methods for determination of nutrient and energy digestibility in fish  
A. Aksnes, T. Hjertnes and J. Opstvedt (Bergen, Norway) . . . . . 343
- Digestibility of starch in *Penaeus vannamei*: in vivo and in vitro study on eight samples of various origin  
M. Cousin, G. Cuzon (Tahiti, French Polynesia), J. Guillaume (Plouzané, France) and AQUACOP (Tahiti, French Polynesia) . . . . . 361

**Physiology and Endocrinology**

- Effects of temperature change rate on nitrogen effluxes of *Macrobrachium rosenbergii* (DeMan)  
A.S.C. Schmitt and R.F. Uglow (Kingston upon Hull, UK) . . . . . 373

**Book Reviews**

- Biochemistry and molecular biology of fish . . . . . 383
- Aquaculture . . . . . 383

- Announcement . . . . . 385

- Aquacultural Engineering Society . . . . . 386

- Contents of *Aquaculture*, Volume 140 . . . . . 387